

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
21 April 2005 (21.04.2005)

PCT

(10) International Publication Number
WO 2005/036758 A1

(51) International Patent Classification⁷: H03M 13/11

(21) International Application Number:
PCT/KR2004/002630

(22) International Filing Date: 14 October 2004 (14.10.2004)

(25) Filing Language: Korean

(26) Publication Language: English

(30) Priority Data:
10-2003-0071456 14 October 2003 (14.10.2003) KR

(71) Applicant (for all designated States except US): SAM-SUNG ELECTRONICS CO., LTD. [KR/KR]; 416, Maetan-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do 442-742 (KR).

(72) Inventors; and

(75) Inventors/Applicants (for US only): YU, Nam-Yul

[KR/KR]; #812-804, Byeokjeokgol 8-danji Apt., Yeongtong-dong, Paldal-gu, Suwon-si, Gyeonggi-do 442-725 (KR). KIM, Min-Goo [KR/KR]; #102-902, Yachyun-maeul Hyundaihometown, 705, Seocheon-ri, Giheung-eup, Yongin, Gyeonggi-do 449-906 (KR).

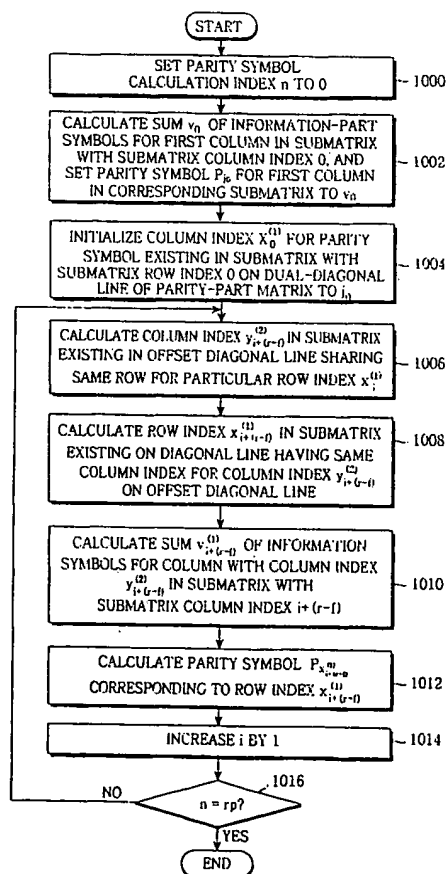
(74) Agent: LEE, Keon-Joo; Mihwa Bldg. 110-2, Myongryun-dong 4-ga, Chongro-gu, Seoul 110-524 (KR).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SI, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH,

[Continued on next page]

(54) Title: METHOD FOR ENCODING LOW-DENSITY PARITY CHECK CODE



(57) Abstract: An apparatus and method for encoding low-density parity check (LDPC) codes. The method for generating a low-density parity check code formed of an information-part matrix and a parity-part matrix comprises the steps of converting the information-part matrix into an array-code structure and assigning a degree sequence to each submatrix column; extending a dual-diagonal matrix corresponding to the parity-part matrix such that an offset value between diagonals has a random value; lifting the normalized dual-diagonal matrix; determining an offset value for cyclic column shift for each submatrix of the lifted normalized dual-diagonal matrix; and determining a parity symbol corresponding to a column of the parity-part matrix.



GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.